

Moving Towards an Integrated Approach to Solid Waste Management



INTEGRATED SOLID WASTE MANAGEMENT

Notes 1

Environmental Management



Integrated solid waste management brings together various aspects of waste management namely, waste prevention, reduction, segregation and recycling, composting, proper collection, and sanitary disposal, making their collective impact greater and LGU-community efforts sustainable.

From Piecemeal to Integrated Waste Management

Several pioneering local governments and private organizations have succeeded in improving specific aspects of solid waste management. Their achievements prove that positive impact on the solid waste problem is greater if interventions are united in a single framework.

Various interventions have focused on efficient collection, waste segregation and recycling, and a few on composting of market waste. Combining all aspects of solid waste management into a holistic approach is called integrated solid waste management (ISWM).

The integrated approach to managing waste considers a variety of methods—waste prevention, reduction, segregation and recycling, composting, and sanitary disposal. When used in a certain locality, these methods need to complement each other so that success in one method will spell success for the whole system.

Without a framework for integration, waste management interventions are not sustainable. For instance, efforts to segregate garbage in the household are wasted if garbage collectors do not segregate waste. Composting and recycling are difficult when households do not segregate biodegradable waste from the non-biodegradable. Waste disposal facilities are filled sooner because most generated waste is thrown away, despite the fact that half of all waste is biodegradable, and half of non-biodegradable waste can be recycled as studies show.

Integrated solid waste management results in efficient use of time, money, and space. Qualitative benefits include fostering an entrepreneurial attitude which values waste as a resource. Community responsibility for waste management is engendered, resulting in a move away from the “collect-and-throw-away mode” of handling waste to an integrated approach.

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Technology

Integrated Solid Waste Management (ISWM) Overview

The integrated waste management approach includes a whole range of management processes: minimizing waste at source, segregating reusable and recyclable waste from disposable waste, recovering materials, collection, and finally, disposal.

- Segregation of various types of waste is crucial to the operation of the integrated solid waste management system. At the household, establishment, or institution level, biodegradable waste must be placed in a separate container. Tin or aluminum cans, plastic, or foil need to be washed, dried, and put in separate bins or

sacks ready for transport to recovery centers.

- Collection can be scheduled so that biodegradable waste is collected on designated days different from those for reusable and recyclable waste. This can be done in the absence of collector trucks that have separate compartments for different types of waste. See [Local Governance Technical Notes on Integrated Solid Waste Management \(LGTN-ISWM\) Notes 6 on Introducing Measures to Improve Garbage Collection Efficiency](#).

- Recovery centers or junk shops collect reusable and recyclable waste to

sell to factories and recycling plants. Also see [LGTN-ISWM Notes 4-1999 on Helping Citizens Earn from Solid Waste](#) and [Notes 5 on Promoting Programs to Convert Solid Waste to Organic Fertilizer](#).

- The disposal site for residual non-biodegradable, non-reusable, and non-recyclable waste is a sanitary landfill. In its absence, the dumpsite serves the purpose, but operations need to be improved to ensure its efficient use. See [LGTN-ISWM Notes 7-1999 on Improving Dumpsite Operations with Limited Budget](#) and [Notes 8-1999 on Preparing for a Landfill](#).

ISWM Process Flow

From as far south as General Santos City to as near Metro Manila as San Jose del Monte in Bulacan, the process of moving from a fragmented approach to an integrated solid waste management approach is gradually taking place. The process has four major phases that can take seven to fourteen months as shown below. The first phase involves classifying and deter-

mining the composition of waste in the locality. [LGTN-ISWM Notes 2-1999 on Appraising the Nature of Solid Waste in the Locality](#) discusses this topic in greater detail. The second phase entails gathering local leaders and representatives from civil society to agree on common goals and ways to address the waste problem in a unified manner. Also see [LGTN-ISWM Notes 3 on Organiz-](#)

[ing Joint Action on ISWM](#). A multi-sectoral group is formed to formulate action plans, budgets, and instruments to implement the plan. The last phase is plan implementation which focuses on immediately doable interventions and activities. This process may end with Phase 4 or repeat itself, which is signified by the broken arrow connecting Phases 4 and 1.

4. Implementing the Doables

The Local Government and citizens implement designated roles to promote:

- Segregation in markets and volunteer neighborhoods
- Efficient waste collection and dumpsite management
- Enact ordinance for the adoption of an integrated approach
- Study long-term measures, e.g., sanitary landfill

(6-12 months)

1. Waste Appraisal

Local Government and volunteers conduct surveys and appraisals to determine the waste profile and existing solid waste management operations.

(1-2 days)

3. Multi-sectoral Planning and Organizing

A Multi-sectoral Task Force of leaders and volunteers observes good practices further, reviews technical options, and develops action plans and budgets for "Doable" actions. The Local Government also designates an officer-in-charge.

(3-6 weeks)

2. Local Government-Citizens Consensus Building

With the help of resource persons and a workshop facilitator using the Technology of Participation (ToP), local leaders and citizens agree on vision, strategies, and first steps to address the problem.

(2-3 days)



Policy and Practice

Enabling Framework

Republic Act No. 7160, the "Local Government Code of the Philippines," mandates local government units to enforce sanitation laws, and prepare a solid waste management program. Section 3, Article I encourages the participation of private sector in local governance.

Presidential Decrees 552, 825, 856, and 984 provide rules and penalties covering sanitation and disposal.

The Implementing Rules and Regulations for Chapter XVII of Presiden-

tial Decree 856 (Code on Sanitation, Chapter on Refuse Disposal) provide specific guidelines for integrated solid waste management. They define the scope of segregation, recycling, and collection activities to support segregation.

Department of Environment and Natural Resources (DENR) Administrative Orders 98-49 and 98-50 provide for guidance and a timeframe for the gradual phaseout of dumpsites, upgrade of disposal facilities from open

dumps to controlled dumps, and establishment of sanitary landfills. They define the site selection criteria for sanitary landfill facilities.

Memorandum Circular No. 39-A of January 19, 1988 from the Office of the President enjoins local governments to establish integrated solid waste management systems that include: management of waste generation; handling and on-site storage; collection, transfer, and transport; processing and recovery; and disposal.

Practices That Are Working

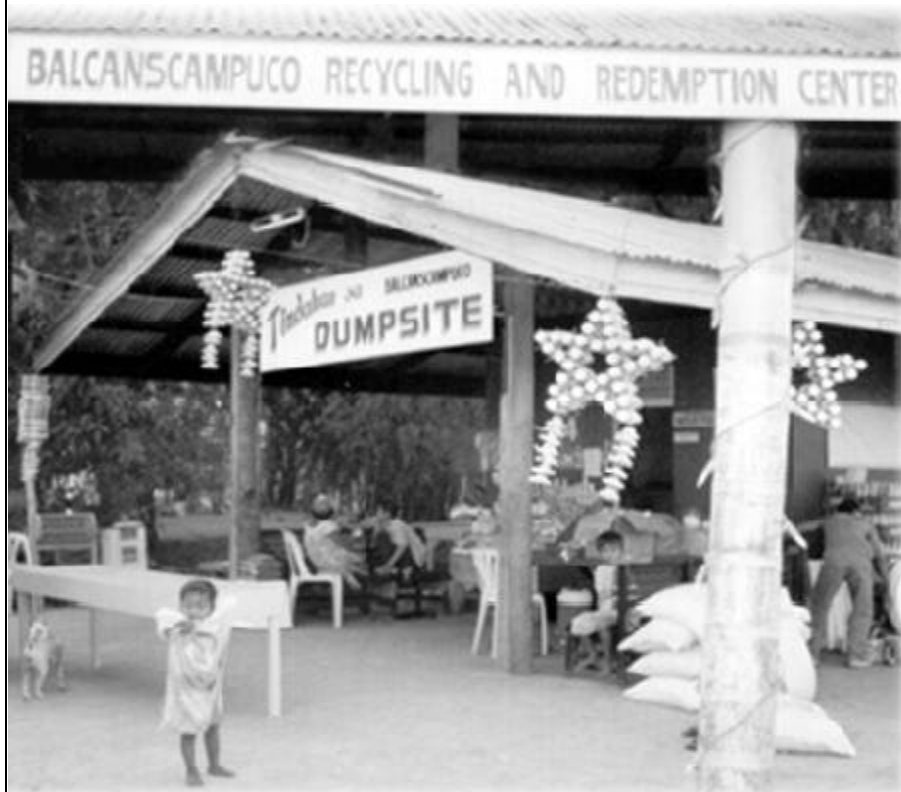
General Santos City forged an alliance with various stakeholders to formulate and implement an integrated solid waste management plan. From

lessons learned in field visits and the study of other local governments' experiences, the City formulated an Integrated Solid Waste Management Or-

dinance. Introducing new procedures on garbage collection reduced waste collection trips from six trips to two to three trips per day. This improvement was complemented by simultaneous campaigns for segregation and recycling. The City Government also improved management of the dumpsite while a new landfill is being prepared.

The Municipality of San Jose del Monte, Bulacan is constructing the first sanitary landfill in the province while promoting waste segregation in its public markets and pilot barangays.

Dumaguete City worked with various civic groups to improve the dumpsite (Galing Pook Awardee). The City Government enforced an Integrated Solid Waste Management Ordinance that established barangay material recovery centers, improved waste collection routes, and imposed more realistic collection fees. Improving their disposal facility is part of an integrated solid waste management program which won a *Galing Pook* award and that includes waste segregation and recycling at household and residential subdivision levels.



Dumaguete City improved its dumpsite and, in cooperation with various civic groups, established cooperatives that also function as materials recovery centers.



LGU Action Agenda

Other Initiatives

Marilao, Bulacan has separate collection days for biodegradable and non-biodegradable waste.

Linamon, Lanao del Norte mobilized volunteer enforcers with authority to issue citation tickets, revised its collection system, and is campaigning for waste segregation efforts among market vendors and other groups.

The **City of San Fernando, La Union** improved its disposal facility while simultaneously promoting simple waste segregation among its citizens to ensure widespread acceptability.

The provinces of **Negros Oriental** and **Palawan** have organized their respective task forces to provide information and education assistance to their municipalities.



Linamon, Lanao del Norte mobilized a team of integrated solid waste management enforcers for the market area.

Resources and References

Technical assistance on ISWM is available in response to LGU needs.

Policy information and overall technical assistance:

- [Department of Environment and Natural Resources \(DENR\)](#)–Presidential Task Force on Waste Management (PTFWM), [DENR-Environmental Management Bureau](#), Quezon City, Tel. (02) 426-2524 c/o Mr. Nolan Francisco
- Local DENR offices
- [Department of Health \(DOH\)](#), Environmental Sanitation Division, Manila, Tel. (02) 743-1781

Providers of Technology of Participation (ToP) training:

- Divine Word College, Research Center, Tagbilaran, Bohol, Tel. (038) 411-3658 c/o Ms. Cynthia Ayco
- Bulacan State University, Institute for Local Government Administration, Malolos, Bulacan, Tel. (044) 791-0153 c/o Dr. Modesta Lugos

- [Gerry Roxas Foundation](#), Roxas City, Tel. (036) 621-1922 c/o Ms. Annie Villarruz

Financial and technical assistance:

- Solid Waste Environmental Enhancement Project (SWEEP)–Project Management Office, DENR, Quezon City, Tel. (02) 426-4332, 426-2516
- Local Government Support Program (LGSP), Pasig City, Tel. (02) 637-3511 to 13
- Governance and Local Democracy (GOLD) Project, Makati City, Tel. (02) 893-9760, 893-9766

Technical assistance on waste reduction, re-use, and recycling:

- Recycling Movement of the Philippines (RMP), Quezon City, Tel. (02) 928-8895 c/o Dr. Luz Sabas
- [Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development \(PCARRD\)](#), Los Baños, Laguna, Tel.

(049) 536-0041 to 20

- [Department of Science and Technology \(DOST\)](#), Bicutan, Taguig, Metro Manila
- [Biotech, UPLB](#), Los Baños, Laguna, Tel. (049) 536-1576
- Local [Department of Agriculture \(DA\)](#) offices
- Local nongovernmental organizations involved in sustainable agriculture

The following are must-read references:

Solid Waste Management for Local Governments. 2nd Ed. Presidential Task Force on Waste Management and the Environmental Management Bureau, Department of Environment and Natural Resources. Manila: 1998.

Mag-“Recycle” Tayo: A “How-To” Guide for Recycled Products. Metropolitan Environmental Improvement Program. Department of Environment and Natural Resources. Manila: 1999.